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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/966,121	09/28/2001	J. G. Walacavage	200-0667	4437
7590		12/02/2005		
Daniel H. Bliss Bliss McGlynn P.C. Suite 600 2075 West Big Beaver Road Troy, MI 48084			EXAMINER GEBRESILASSIE, KIBROM K	
			ART UNIT	PAPER NUMBER
			2128	

DATE MAILED: 12/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.		Applicant(s)	
	09/966,121		WALACAVAGE ET AL.	
	Examiner		Art Unit	
	Kibrom K. Gebresilassie		2128	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 October 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 October 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-9 have been presented for examination based on applicant's amendment filed on 12 October 2005.
2. Claims 1-19 remains rejected by the examiner.

Response to Arguments

3. Applicants arguments filed on 12 October 2005 have been fully considered.

Regarding proposed drawing changes: Applicant's proposed drawing changes have been approved by the examiner pending review by the draftsman.

Regarding applicant's response to 102(e): Applicant's arguments relating to amended claim 1 are not persuasive. The examiner notes that the amended claim limitation that recites, "to replicating a motion of a mechanical model by generating a PLC code for the motion of the mechanical model if the motion of the mechanical model was acceptable and using the accepted motion of the mechanical model to compare the behavior of the PLC code relative to the accepted motion by playing the PLC code with a PLC emulator", can merely interpreted as "The validation is performed by having the virtual PLC generator instruct CAD tooling models associated with the creation of the control model that the virtual PLC generator read in. While executing the line model, the line verification system returns line status data (device state changes) to the virtual PLC generator. The virtual PLC generator receives back signals from the CAD tooling model that inform the virtual PLC generator of a state changes with a particular device. The virtual PLC generator then takes this input signal and adjusts its input image table, and rescan the PLC code to determine if this signal change has allowed a dependency to be met that will produce an output instruction from the virtual PLC generator back to the CAD tooling models (col. 4 lines 36-49)."

The examiner also noted that the claimed "PLC Emulator" are simply defined by applicants specification be "the emulator sends and receives information with the PLC logical verification system to verify the PLC code" (Specification page 8, lines 18-19). The examiner submits that it is well established in the teaching of prior art (Walacavage) as "PLC code Generator" (col. 2 lines 31-39 recites, " The virtual PLC code generator sends and receives information with the line verification system to verify the PLC code.")

The examiner therefore maintains the 102(e) rejection of claims 1, 11, and 17.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-19 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,442,441 issued to Walacavage.

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

As per Claim 1:

Walacavage discloses a method of emulating machine tool behavior for a programmable logic controller logical verification system for manufacturing a motor vehicle, said method comprising the steps of:

constructing a mechanical model (workcell model; col. 3 line 25);

viewing motion of the mechanical model in a motion viewer(VisLine; Fig. 2 element 40);

determining whether the motion of the mechanical model is acceptable (col. 3 lines 59-65);

replicating the motion of the mechanical model by generating PLC code for the motion of the mechanical model if the motion of the mechanical model was acceptable(col. 4 lines 36-49); and

using the accepted motion of the mechanical model to compare the behavior of the PLC code relative to the accepted motion (col. 4 lines 44-49)by playing the PLC code with a PLC emulator(col. 2 lines 34-39).

As per Claim 2:

Walacavage discloses a method as set forth in claim 1 wherein said of constructing comprises using a mechanical tool design system (fixture design system and workcell design system; col. 2 lines 28-31) to construct the mechanical model (workcell model; col. 3 line 25).

As per Claim 3:

Walacavage discloses a method as set forth in claim 2 including the steps of constructing an electromechanical model (control model; col. 2 lines 54-57).

As per Claim 4:

Walacavage discloses a method as set forth in claim 3 wherein said step of constructing the mechanical model (workcell model; col. 3 line 25) includes binding the electromechanical

model to the mechanical model (col. 3 lines 27- 32).

As per Claim 5:

Walacavage discloses a method as set forth in claim 4 wherein said step of constructing the electromechanical model comprises using a PLC logical verification system to construct the electromechanical model (Abstract).

As per Claim 6:

Walacavage discloses a method as set forth in claim 1 including the step of generating transformational arrays based on computer aid design (CAD) (CAD tooling models; col. 4 line 37) geometries of the mechanical model (workcell model; col. 3 line 25).

As per Claim 7:

Walacavage discloses a method as set forth in claim 6 including the step of exporting the mechanical model to a control system design system (neutral control model file; col. 3 lines 23-25).

As per Claim 8:

Walacavage discloses a method as set forth in claim 7 including the step of constructing a motion file based on the mechanical model and transformational arrays (col. 4 lines 30-39).

As per Claim 9:

Walacavage discloses a method as set forth in claim 8 wherein said step of displaying further comprises playing the motion file by motion player (VisLine; Fig. 2 element 40).

As per Claim 10:

Walacavage discloses a method as set forth in claim 8 including the step of returning to the mechanical tool design system if the motion of the mechanical model is not acceptable (col. 3 lines 65-67).

As per Claim 11:

The limitation of claim 11 has already been discussed in the rejection of claims 1, 6, and 8. It is therefore rejected under the same rationale.

As per Claim 12:

The limitation of claim 12 has already been discussed in the rejection of claim 2. It is therefore rejected under the same rationale.

As per Claim 13:

The limitation of claim 13 has already been discussed in the rejection of claim 3. It is therefore rejected under the same rationale.

As per Claim 14:

The limitation of claim 14 has already been discussed in the rejection of claim 4. It is therefore rejected under the same rationale.

As per Claim 15:

The limitation of claim 15 has already been discussed in the rejection of claim 5. It is therefore rejected under the same rationale.

As per Claim 16:

The limitation of claim 16 has already been discussed in the rejection of claim 6. It is therefore rejected under the same rationale.

As per Claim 17:

Walacavage discloses a method as set forth in claim 11 including the step of exporting the mechanical model to the PLC emulator (col. 2 lines 34-39).

As per Claim 18:

The limitation of claim 18 has already been discussed in the rejection of claim 9. It is therefore rejected under the same rationale.

As per Claim 19:

The limitation of claim 19 has already been discussed in the rejection of claim 10. It is therefore rejected under the same rationale.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office Action. Accordingly, **THIS ACTION IS MADE FINAL**. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent No. 5,574,637 issued to Obata et al.

U.S. patent No. 6,263,487 issued to Stripf et al.

8. Any inquiring concerning this communication or earlier communication from the examiner should be directed to Kibrom K. Gebresilassie whose telephone number is (571) 272-8571. The examiner can normally be reached on Monday-Friday, 8:30 am to 4:30 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner supervisor, Kamini shah can be reached at (571) 272-2279. The official fax number is (571) 273-8300. Any

Art Unit: 2128

inquiring of a general nature relating to the status of this application should be directed to the group receptionist whose telephone number is (571) 272-3700.

Kibrom K. Gebresilassie

Patent Examiner

U.S. Patent and Trademark Office

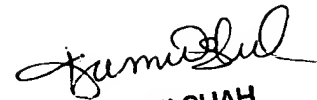
Simulation and Emulation, Art Unit 2128

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